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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEVI, DAMEON E

ART UNIT	PAPER NUMBER
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2841

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/823,391

Applicant(s)

RHOADS, MONTE J.

Examiner

Dameon E Levi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-14, 16-26, 28-46, 48-50 and 52-58 is/are rejected.
- 7) ☐ Claim(s) 4, 15, 27 and 51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,3,5-8,33-35,40-46 rejected under 35 U.S.C. 102(b) as being anticipated by Dramstad et al US Patent 6004139.

Regarding claim 1, Dramstad et al discloses an apparatus comprising:

- a mounting portion including a first communication path to route at least one signal line from a first card connector on a circuit board to a first card connector on the mounting portion (for example, see elements 66, 81, Fig 7)
- a routing portion including a communication path, the communication path of the routing portion to route at least one signal line from a second card connector on the circuit board to the mounting portion (for example, see element 70, Fig 7)
- a second communication path of the mounting portion to route the at least one signal line of the second card connector on the circuit board to a second card connector on the mounting portion (for example, see element 72, Fig 7)

Regarding claim 2, Dramstad et al discloses the mounting portion and the routing portion comprising a single integrated component (for example, see Fig 6).

Regarding claim 3, Dramstad et al discloses an assembly further comprising at least one other routing portion including a communication path to route at least one signal

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line from a third card connector on the circuit board to the mounting portion, a third communication path of the mounting portion to route the at least one signal line of the third card connector on the circuit board to a third card connector on the mounting portion (for example, see element 72, Fig 7).

Regarding claim 5, Dramstad et al discloses a routing portion comprising a first riser for coupling with the second card connector on the circuit board; and a second riser coupled with the first riser, the second riser for coupling with the mounting portion (for example, see element 70, Fig 7).

Regarding claim 6, Dramstad et al discloses a first riser and the second riser comprising a single part (for example, see element 70, Fig 7).

Regarding claim 7, Dramstad et al discloses a first riser oriented substantially transverse to a circuit board and the second riser oriented substantially parallel to the circuit board (for example, see element 70, Fig 7).

Regarding claim 8, the use of a flexible cable as a routing portion is seen as an alternate means for signal routing and is merely a matter of design choice by the applicant.

Regarding claim 33, Dramstad et al discloses an apparatus comprising:

- first routing means including a first communication means for routing at least one signal line from a first card connector on a circuit board to a first card connector disposed on the first routing means (for example, see elements 66, 81, Fig 7)
- second routing means including a communication means, the communication means of the second routing means for routing, at least one signal line from a

second card connector on the circuit board to the first routing, means (for example, see element 70, Fig 7)

- a second communication means of the first routing means to route the at least one signal line of the second card connector on the circuit board to a second card connector disposed on the first routing means (for example, see element 72, Fig 7)

Regarding claim 34, Dramstad et al discloses the assembly further comprising a third routing means including a communication means for routing at least one signal line from a third card connector on the circuit board to the first routing means, a third communication means of the first routing means to route the at least one signal line of the third card connector on the circuit board to a third card connector disposed on the first routing means (for example, see element 72, Fig 7).

Regarding claim 35, electrical or optical signals are conventionally routed by communicating means during the operation of a computer assembly and is merely a functional recitation of the communicating means.

Regarding claim 40, Dramstad et al discloses wherein each of the first and second communication paths of the mounting portion and the communication path of the routing portion comprises an electrically conductive path (for example, see column 5, lines 47-65)

Regarding claim 41, an optical path used as a communication path is seen as an alternate means for signal transmission and is seen as a mere matter of design choice .

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Regarding claim 42, Dramstad et al discloses wherein each of the first and second communication paths of the mounting portion and the communication path of the routing portion comprises an electrically conductive path (for example, see column 5, lines 47-65)

Regarding claim 43, an optical used as a communication path is seen as an alternate means for signal transmission and is seen as a mere matter of design choice .

Regarding claim 44, Dramstad et al discloses wherein each of the first and second communication paths of the mounting portion and the communication path of the routing portion comprises an electrically conductive path (for example, see column 5, lines 47-65)

Regarding claim 45, an optical used as a communication path is seen as an alternate means for signal transmission and is seen as a mere matter of design choice .

Regarding claim 46, Dramstad et al discloses an apparatus comprising:

- a circuit board; a first card connector disposed on the circuit board and having at least one signal line extending therefrom (for example, see elements 60,62, Fig 7)
- a second card connector disposed on the circuit board and having at least one signal line extending therefrom (for example, see element 63, Fig 7)
- a mounting portion secured in the first card connector on the circuit board, the mounting portion including a first communication path to couple the at least one signal line of the first card connector on the circuit board to a first card connector disposed on the mounting portion;(for example, see elements 66,81, Fig 7)

- a routing portion secured in the second card connector on the circuit board, the routing portion including a communication path to couple the at least one signal line of the second card connector on the circuit board to the mounting portion (for example, see element 70, Fig 7)
- a second communication path of the mounting portion to couple the at least one signal line of the second card connector on the circuit board to a second card connector disposed on the mounting portion (for example, see element 72, Fig 7)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-14,16-26,28-32,36-39,48-50,52-58 rejected under 35 U.S.C. 103(a) as being unpatentable over Dramstad et al US Patent 6004139 in view of Leman US Patent 6046912.

Regarding claim 9, Dramstad et al discloses an assembly comprising:

- a mounting portion secured in the first card connector on the circuit board, the mounting portion including a first communication path to couple the at least one signal line of the first card connector on the circuit board to a first card connector disposed on the mounting portion (for example, see elements 66, 81, Fig 7)

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- a routing portion secured in the second card connector on the circuit board, the routing portion including a communication path to couple the at least one signal line of the second card connector on the circuit board to the mounting portion (for example, see element 70, Fig 7)
- a second communication path of the mounting portion to couple the at least one signal line of the second card connector on the circuit board to a second card connector disposed on the mounting portion (for example, see element 72, Fig 7)

Leman discloses an apparatus comprising:

- a circuit board; a processor disposed on the circuit board; a chip set disposed on the circuit board and coupled to the processor (see elements 300,318 Fig 5)
- a first card connector disposed on the circuit board and coupled to the chip set by at least one signal line (see element 312, Fig 4)
- a second card connector disposed on the circuit board and coupled to the chip set by at least one signal line(see element 306, Fig 4)

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the processor, chipset, and card connectors with signal lines coupling them together as taught by Lemman in the assembly as taught by Dramstad et al as such elements are essential and conventional in the operation of a computer assembly.

Regarding claim 10, Dramstad et al discloses the instant claimed invention except a peripheral card secured in one of the first card connector on the mounting portion and the second card connector on the mounting portion.

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Leman discloses a peripheral card secured in one of the first card connector on the mounting portion and the second card connector on the mounting portion (see column 2, lines 48-50).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a peripheral card in the card connectors on the mounting portion as taught by Lemman in the assembly of Dramstad et al as peripheral cards are conventional and essential in the operation of a computer assembly.

Regarding claim 11, Dramstad et al discloses the instant claimed invention except the mounting portion to orient the peripheral card substantially parallel to the circuit board. Lemman discloses a mounting portion to orient the peripheral card substantially parallel to the circuit board (see column 2, lines 48-50).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have arranged the mounting portion to orient the peripheral card substantially parallel to the circuit board as such arrangement is conventional in the art in order to construct a low profile computer assembly.

Regarding claim 12, GNT# line and REQ# lines are seen as functional designations of signals conventionally essential in the operation of a computer assembly.

Regarding claim 13, Dramstad et al discloses the mounting portion and the routing portion comprising a single integrated component (for example, see Fig 6).

Regarding claim 14, Dramstad et al discloses at least one other routing portion secured in the third card connector on the circuit board, the at least one other routing portion including a communication path to couple the at least one signal line of the third

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card connector on the circuit board to the mounting portion, a third communication path of the mounting portion to couple the at least one signal line of the third card connector on the circuit board to a third card connector disposed on the mounting portion (for example, see element 72, Fig 7).

Leman discloses a third card connector disposed on a circuit board and coupled to the chip set by at least one signal line (for example, see Fig 3).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a third card connector coupled to a chipset as disclosed by Leman in the assembly of Dramstad et al as such an arrangement is conventionally essential in the operation of a computer assembly.

Regarding claim 16, Dramstad et al discloses a routing portion comprising a first riser coupled with the second card connector on the circuit board, and a second riser coupled with the first riser, the second riser coupled with the mounting portion (for example, see element 70, Fig 7).

Regarding claim 17, Dramstad et al discloses a first riser and the second riser comprising a single part (for example, see element 70, Fig 7).

Regarding claim 18, Dramstad et al discloses a first riser oriented substantially transverse to a circuit board and the second riser oriented substantially parallel to the circuit board (for example, see element 70, Fig 7).

Regarding claim 19, the use of a flexible cable as a routing portion is seen as an alternate means for signal routing and is merely a matter of design choice by the applicant.

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Regarding claim 20, Dramstad et al discloses the instant claimed invention except a first card connector on the circuit board separated from the second card connector on the circuit board by at least one intervening card connector disposed on the circuit board.

Leman et al discloses an assembly wherein the first card connector on a circuit board is separated from a second card connector on a circuit board by at least one intervening card connector disposed on the circuit board (for example, see Fig 3).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have separated the card connectors on the circuit board with intervening connectors in between as taught by Lemman in the assembly of Dramstad et al for the purpose of expanding the capabilities of the computer assembly by adding more peripheral cards in the intervening connectors.

Regarding claim 21, Dramstad et al discloses an apparatus comprising:

- a mounting portion secured in the first card connector on the circuit board, the mounting portion including a first communication path to couple the at least one signal line of the first card connector on the circuit board to a first card connector disposed on the mounting portion (for example, see elements 66, 81, Fig 7)
- a routing portion secured in the second card connector on the circuit board, the routing portion including a communication path to couple the at least one signal line of the second card connector on the circuit board to the mounting portion (for example, see element 70, Fig 7)

- a second communication path of the mounting portion to couple the at least one signal line of the second card connector on the circuit board to a second card connector disposed on the mounting portion (for example, see element 72, Fig 7)

Leman discloses an apparatus comprising:

- a chassis; a circuit board disposed in the chassis; a processor disposed on the circuit board; a chip set disposed on the circuit board and coupled to the processor(see elements 300,318 Fig 5)
- a first card connector disposed on the circuit board and coupled to the chip set by at least one signal line (see element 312, Fig 4)
- a second card connector disposed on the circuit board and coupled to the chip set by at least one signal line (see element 306, Fig 4)

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the chassis, processor, chipset, and card connectors with signal lines coupling them together as taught by Lemman in the assembly as taught by Dramstad et al as such elements are essential and conventional in the assembly and operation of a computer assembly.

Regarding claim 22,Dramstad et al discloses the instant claimed invention except a peripheral card secured in one of the first card connector on the mounting portion and the second card connector on the mounting portion.

Leman discloses a peripheral card secured in one of the first card connector on the mounting portion and the second card connector on the mounting portion (see column 2, lines 48-50).

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Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a peripheral card in the card connectors on the mounting portion as taught by Leman in the assembly of Dramstad et al as peripheral cards are conventional and essential in the operation of a computer assembly.

Regarding claim 23, Dramstad et al discloses the instant claimed invention except the mounting portion to orient the peripheral card substantially parallel to the circuit board. Leman discloses a mounting portion to orient the peripheral card substantially parallel to the circuit board (see column 2, lines 48-50).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have arranged the mounting portion to orient the peripheral card substantially parallel to the circuit board as such arrangement is conventional in the art in order to construct a low profile computer assembly.

Regarding claim 24, GNT# line and REQ# lines are seen as functional designations of signals conventionally essential in the operation of a computer assembly.

Regarding claim 25, Dramstad et al discloses the mounting portion and the routing portion comprising a single integrated component (for example, see Fig 6).

Regarding claim 26, Dramstad et al discloses at least one other routing portion secured in the third card connector on the circuit board, the at least one other routing, portion including a communication path to couple the at least one signal line of the third card connector on the circuit board to the mounting portion, a third communication path of the mounting portion to couple the at least one signal line of the third card connector

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on the circuit board to a third card connector disposed on the mounting portion (for example, see element 72, Fig 7).

Leman discloses a third card connector disposed on a circuit board and coupled to the chip set by at least one signal line (for example, see Fig 3).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a third card connector coupled to a chipset as disclosed by Leman in the assembly of Dramstad et al as such an arrangement is conventionally essential in the operation of a computer assembly.

Regarding claim 28, Dramstad et al discloses a routing portion comprising a first riser coupled with the second card connector on the circuit board, and a second riser coupled with the first riser, the second riser coupled with the mounting portion (for example, see element 70, Fig 7).

Regarding claim 29, Dramstad et al discloses a first riser and a second riser comprising a single part (for example, see element 70, Fig 7).

Regarding claim 30, Dramstad et al discloses a first riser oriented substantially transverse to a circuit board and the second riser oriented substantially parallel to the circuit board (for example, see element 70, Fig 7).

Regarding claim 31, the use of a flexible cable as a routing portion is seen as an alternate means for signal routing and is merely a matter of design choice by the applicant.

Regarding claim 32, Dramstad et al discloses the instant claimed invention except a first card connector on the circuit board separated from the second card connector on

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the circuit board by at least one intervening card connector disposed on the circuit board.

Leman et al discloses an assembly wherein the first card connector on a circuit board is separated from a second card connector on a circuit board by at least one intervening card connector disposed on the circuit board (for example, see Fig 3).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have separated the card connectors on the circuit board with intervening connectors in between as taught by Lemman in the assembly of Dramstad et al for the purpose of expanding the capabilities of the computer assembly by adding more peripheral cards in the intervening connectors.

Regarding claim 47, Dramstad et al discloses the instant claimed invention except a peripheral card secured in one of the first card connector on the mounting portion and the second card connector on the mounting portion.

Leman discloses a peripheral card secured in one of the first card connector on the mounting portion and the second card connector on the mounting portion (see column 2, lines 48-50).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a peripheral card in the card connectors on the mounting portion as taught by Lemman in the assembly of Dramstad et al as peripheral cards are conventional and essential in the operation of a computer assembly.

Regarding claim 48, Dramstad et al discloses the instant claimed invention except the mounting portion to orient the peripheral card substantially parallel to the circuit board

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Leman discloses a mounting portion to orient the peripheral card substantially parallel to the circuit board (see column 2, lines 48-50).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have arranged the mounting portion to orient the peripheral card substantially parallel to the circuit board as such arrangement is conventional in the art in order to construct a low profile computer assembly.

Regarding claim 49, Dramstad et al discloses the mounting portion and the routing portion comprising a single integrated component (for example, see Fig 6).

Regarding claim 50, Dramstad et al discloses the assembly further comprising: a third card connector disposed on the circuit board and having at least one signal line extending therefrom; and at least one other routing portion secured in the third card connector on the circuit board, the at least one other routing portion including a communication path to couple the at least one signal line of the third card connector on the circuit board to the mounting portion, a third communication path of the mounting portion to couple the at least one signal line of the third card connector on the circuit board to a third card connector disposed on the mounting portion (for example, see elements 65, 72, 69, Fig 7)

Regarding claim 52, Dramstad et al discloses a routing portion comprising a first riser coupled with the second card connector on the circuit board, and a second riser coupled with the first riser, the second riser coupled with the mounting portion (for example, see element 70, Fig 7).

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Regarding claim 53, Dramstad et al discloses a first riser and a second riser comprising a single part (for example, see element 70, Fig 7).

Regarding claim 54, Dramstad et al discloses a first riser oriented substantially transverse to a circuit board and the second riser oriented substantially parallel to the circuit board (for example, see element 70, Fig 7).

Regarding claim 55, the use of a flexible cable as a routing portion is seen as an alternate means for signal routing and is merely a matter of design choice by the applicant.

Regarding claim 56, Dramstad et al discloses the instant claimed invention except a first card connector on the circuit board separated from the second card connector on the circuit board by at least one intervening card connector disposed on the circuit board.

Leman et al discloses an assembly wherein the first card connector on a circuit board is separated from a second card connector on a circuit board by at least one intervening card connector disposed on the circuit board (for example, see Fig 3).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have separated the card connectors on the circuit board with intervening connectors in between as taught by Lemman in the assembly of Dramstad et al for the purpose of expanding the capabilities of the computer assembly by adding more peripheral cards in the intervening connectors.

Regarding claim 57, Dramstad et al discloses wherein each of the first and second communication paths of the mounting portion and the communication path of the routing

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portion comprises an electrically conductive path (for example, see column 5, lines 47-65)

Regarding claim 58, an optical path used as a communication path is seen as an alternate means for signal transmission and is seen as a mere matter of design choice .

Regarding claims 39-39, the methods disclosed therein are deemed as inherent in the assembly of the claimed apparatus of the preceding claims as fully met by the accompanying references, (Dramstad et al, Leman) and are subsequently rejected.

Allowable Subject Matter

Claims 4,15,27,51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dameon E Levi whose telephone number is (703) 305-0426. The examiner can normally be reached on Mon.-Fri. (9:00 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David S Martin can be reached on (703) 308-3121. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0058.

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Dameon E Levi
Examiner
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DEL
August 22, 2002



Jayprakash N. Gandhi
Primary Examiner
Technology Center 2800